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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/089,052	03/22/2002	Gerhard Koelle	2019	5492

7590

07/15/2003

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EXAMINER

CUEVAS, PEDRO J

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 07/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/089,052

Applicant(s)

KOELLE ET AL.

Examiner

Pedro J. Cuevas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 11-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3/02.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 11-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The terms R-S-T-system, and d, q-system, are not fully described in the specification.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 11-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,714,039 to Shimada in view of U.S. Patent No. 4,310,892 to Himmler.

Shimada disclose the construction of a sewing machine driving system having a claw pole generator (38) as a rotating component, with position detection capabilities (Abstract).

However, it fails to disclose a system, which is operated in the R-S-T-system and whose modulation requires the transformation of the stator values from the R-S-T-system into the d, q-system and vice versa, characterized in that:

- the claw pole generator as an overall system is divided into a non-detectable subsystem, and a detectable subsystem by a transformation matrix T, which contains a filter element and supplies output values;

- the detectable subsystem contains a Kalman-Bucy filter element, which estimates the status values of the detectable subsystem;

- the detectable subsystem contains a status detector, which recalculates status values of the detectable subsystem after a status change.

Himmler teach the use of a method for determining imbalance in a mechanical system which is operated in the R-S-T-system and whose modulation requires the transformation of the stator values from the R-S-T-system into the d, q-system and vice versa, characterized in that:

- the claw pole generator as an overall system is divided into a non-detectable subsystem, and a detectable subsystem by a transformation matrix T, which contains a filter element and supplies output values;

- the detectable subsystem contains a Kalman-Bucy filter element, which estimates the status values of the detectable subsystem;

the detectable subsystem contains a status detector, which recalculates status values of the detectable subsystem after a status change for the purpose of detecting rotor oscillations caused by the systems imbalance.

It would have been obvious to one skilled in the art at the time the invention was made to use the sewing machine driving system disclosed by Himmeler on the method for determining imbalance in a mechanical system disclosed by Shimada for the purpose of detecting rotor oscillations caused by the systems imbalance.

6. With regards to claims 15-20, it would have been obvious to one having ordinary skill in the art at the time the invention was made to:

determine an L-matrix in the filter element of the detectable subsystem based on the optimization of a quadratic efficiency rating;

estimate the status values of the detectable subsystem of the overall system of the claw pole machine by means of the filter element;

calculate the status values of the non-detectable subsystem based on the estimated and calculated status values of the detectable subsystem;

inverse transform through combination with a transformation matrix  $T$ , the estimated status values and the calculated status values of the subsystems;

the status values include the transformed stator currents of the d, q-system, the angular frequency  $\omega$ , and the magnet wheel angle of the rotor of the claw pole machine;

disposing a chronologically variable voltage source in the exciter circuit of the claw pole machine, in order to determine the rotor starting position, and executing a measurement of the phase voltages of the stator winding,

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since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980), and where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Also, if the “acts” of a claimed process manipulate only numbers, abstract concepts or ideas, or signals representing any of the foregoing, the acts are not being applied to appropriate subject matter. *Schrader*, 22F.3d at 294-95, 30USPQ2d at 1458-59. Thus, a process consisting solely of mathematical operations, i.e., converting one set of numbers into another set of numbers, does not manipulate appropriate subject matter and thus cannot constitute a statutory process. MPEP 2106.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

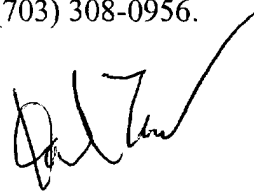
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pedro J. Cuevas whose telephone number is (703) 308-4904. The examiner can normally be reached on M-F from 8:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor R. Ramírez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-1341 for regular communications and (703) 305-3432 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Pedro J. Cuevas  
July 10, 2003

A handwritten signature in black ink, appearing to read 'Karl Tamai', with a long, sweeping flourish extending from the end.

**KARL TAMAI**  
**PRIMARY EXAMINER**